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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,674	05/09/2001	Akhileswar Ganesh Vaidyanathan	CL-1666USNA	3257

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EXAMINER

LIN, JERRY

ART UNIT PAPER NUMBER

1631

DATE MAILED: 12/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/851,674

Applicant(s)

VAIDYANATHAN ET AL.

Examiner

Jerry Lin

Art Unit

1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 35-53 and 66-68 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 35-53 and 66-68 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 14, 2005 has been entered.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 35-53 and 66-68 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

This rejection is reiterated from the previous office action.

The method of claims 35-53 and 68, which are methods for discovering one or more patterns in a set of K sequences of symbols or methods of forming a (k+1)-tuple table, appear to be methods drawn entirely to data manipulation, since they do not clearly require any steps involving physical manipulation, and they do not produce results that are concrete, tangible and useful. See MPEP § 706.03(a) and §2106. In regard to claim 68, MPEP §2106 also clarifies that claiming such non-statutory subject matter on a computer medium or in software does not prevent this rejection.

In addition, data structures recited in claims 66 and 67 are descriptive materials that are non-functional, and thus the computer readable medium containing data structures is non-statutory. According to the MPEP §2106 (IV)(B)(1)(b),

"Where certain types of descriptive material, such as music, literature, art, photographs and mere arrangements or compilations of facts or data, are merely stored so as to be read or outputted by a computer without creating any functional interrelationship, either as part of the stored data or as part of the computing processes performed by the computer, then such descriptive material alone does not impart functionality either to the data as so structured, or to the computer. Such 'descriptive material' is not a process, machine, manufacture or composition of matter."

In the instant claims, the limitations are descriptions of the data structures embodied on a computer readable medium. This is an arrangement of a set of data or as the applicant put it "an organization of information." As written, the instant claims do not involve any process, which utilizes the arrangement of data. Although the claim does state the data structures are useful in controlling a computer system, this is only an intended use, not an actual statutory process. Thus the data structure constitutes descriptive material that is nonfunctional and thus non-statutory.

The applicant has re-iterated his position that the symbols in the instant claims represent "things" such as members of an alphabet, which may be represented in print or electronically, or a chemical composition of a protein, an amino acid, or any other physical entity. However, the MPEP states, "If the steps of gathering and substituting values were alone sufficient, every mathematical equation, formula, or algorithm having any practical use would be per se subject to patenting as a 'process' under 101. Consideration of whether the substitution of specific values is enough to convert the

disembodied ideas present in the formula into an embodiment of those ideas, or into an application of the formula, is foreclosed by the current state of the law." MPEP §2106 (iv) (B) (2) (b) (ii). Even though the applicant claims these symbols represent things, the mere fact that the symbols are the representation of something else does not sufficiently establish that the claims are statutory. The claims are drawn to an abstract conception of organizing patterns among abstract symbols.

Applicants also argue that the invention is not directed to solving a mathematical equation. The Examiner agrees with the Applicants. However the invention is directed toward a mathematical algorithm that analyzes symbols. According to the applicant, these symbols can represent a variety of abstract concepts such as members of an alphabet, which may be represented in print or electronically, or a chemical composition of a protein, an amino acid, or any other physical entity. Since the invention is directed toward a mathematical algorithm MPEP §2106 (IV)(B)(2)(b)(ii) applies.

The applicant also contends that there is a selection step. However, the instant claims only recite a collecting step. According to the Merriam-Webster Online dictionary, to collect is "a: to bring together into one body or place. b: to gather or exact from a number of persons or sources." Furthermore, the Merriam-Webster Online dictionary states that a synonym for "collect" is "gather." Thus the instant claims contain a gathering step, which the MPEP specifically states that a step of gathering is not sufficient for a determination of patentability (See MPEP §2106 (IV)(B)(2)(b)(ii)). Applicants contend that the since they are collecting in accordance to a predetermined characteristic, that the collecting step is the equivalent of a selecting step. However the

process of gathering objects always includes a predetermined characteristic that defines what the object is. The applicants' contention does not differentiate how the instant step is a selecting step and not a gathering step.

Regarding claims 66 and 67, Applicants have responded to this rejection by stating that the amendments incorporate functional language into the instant claims. The Examiner disagrees. The amendments clarify the kinds of data structures that are intended to be encompassed by the scope of the instant claims. However, it remains that the instant claims do not have any process that utilizes the arrangement of data. Thus the data structure constitutes descriptive material that is nonfunctional and thus non-statutory.

This rejection is maintained from the previous office action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 66 and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Califano (US 5577249 A).

That data structure and its intended use, as in instant Claims 66 and 67, is considered to be "non-functional descriptive" material, for the reasons stated above.

All limitations of this type of data structure are given no patentable weight, as they are non-functional descriptive material. The patentable weight given to the limitations of claims 66 and 67 are limited to any type of computer-readable medium storing any type of data structure.

Califano teaches storing information associated with each sequence tuple as an array "data look-up structure" in a computer "hard disk" (a computer-readable medium) (see column 9, lines 14-30). Califano renders obvious the computer readable format containing the data structures of claims 66 and 67.

This rejection is maintained from the previous office action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry Lin whose telephone number is (571) 272-2561. The examiner can normally be reached on 10:00am-6:30pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel, Ph.D. can be reached on (571) 272-0718. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). Representatives are available to answer your questions daily from 6 am to midnight (EST). When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center at (800) 786-9199.

MICHAEL BORIN, PH.D
PRIMARY EXAMINER



JL